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ARITHMETIC.

[Read before the Plymouth County Teachers' Association, by A. E. WINSHIP, of Bridgewater.]

WHILE we have the highest appreciation of the work done by earnest teachers, we think it not unjust to say, that the child is not taught what he needs, as he needs it to fit him for life. However widely we may differ as regards the defect and its remedy, all agree that there is a defect, and that some remedy should be applied. Our object is to call attention to one of the defects in our common-school system, and to propose a remedy.

The defect is, — there is too much time devoted to teaching arithmetic, and there is not arithmetic enough taught.

In order to show this, let us consider, —

The relation of school life to after life;

The value of a knowledge of numbers in the active business of life;

And the value of the study of numbers as a means of mental development.

Then we will notice how much time is actually spent in studying numbers, and seek a remedy for the defect.

THE RELATION OF SCHOOL LIFE TO AFTER LIFE.

A large majority of the American people are never formally instructed, except while they are in the common schools. The

school, then, must furnish those facts, or lay a foundation for each of the sciences that those facts may be collected which are needed to make a man useful, happy, and prosperous. The school must also furnish that mental discipline which will enable the man to solve the problems of life in a manner satisfactory to himself, his fellowmen, and his Creator.

What subjects should the child be taught in order that the man may have, and know how to use, the necessary knowledge? First of all — in order of importance and not in point of time — he should be taught how to *read*. He need not be made an elocutionist, but every one should be able to read readily, accurately, and understandingly. Every one must know how to *spell* ordinary words correctly. Every one needs to know how to write a legible hand, also how to *compose*, so that he may place upon paper his instructions regarding any piece of work, or a description of an animal or other article he wishes to buy or sell.

Such a knowledge of *numbers* is necessary as will enable a man to perform readily and accurately all the operations upon numbers which will occur in an ordinary business life. Every one must be taught how to speak, *i. e.*, to state facts and describe operations and things in an intelligible manner. In this connection a child should be taught the practical part of grammar, pronunciation, and etymology. Every one should have a knowledge of the geography of his own town, county, state and nation, and something of the geography of other lands.

No American citizen is competent to exercise the elective franchise intelligently, or fully enjoy the protection of the government, unless he understands the principles of government; the functions of the legislative, judiciary and executive departments; the officers of each, the manner of their election, their term of office, and duties. The principles of drawing, if thoroughly understood, would enable a man to be a more efficient workman in almost any business.

Many days of health might be added to all if the principles of physiology and hygiene were taught. A knowledge of the various forces in nature, the conditions and effects of their action; of the trees which shade and beautify our homes, or make the mighty forest; of the birds that entertain us with their songs; of the

rocks seen about the fields, along the roadside, or used in making our massive buildings; of the animals which do our work, or roam in the forests, would make our homes more attractive, and us more useful to man and humane to beasts, as well as enable us to enjoy more fully all the blessings from the hand of an ever-giving Father.

These subjects, well taught, give a man most of the facts necessary in order that he may himself collect all the information needed to make him successful in life.

Without entering into a discussion of the subject now, we venture the statement that the child of fifteen may have a good knowledge of each of these subjects if he be properly taught.

THE VALUE OF A KNOWLEDGE OF NUMBERS IN THE BUSINESS OF LIFE.

The common idea is that a knowledge of numbers prevents us from being cheated in business transactions. Is this idea correct? No; we are seldom, if ever, cheated by a man who dares make wrong computations. A man who knows nothing of figures is comparatively safe from such frauds; but we are *daily* cheated in the *quality* of the things purchased. A knowledge of the various woods, coals, seeds, fruits, meats, and the like, will do vastly more to insure us against the wiles of the crafty than a knowledge of numbers.

It is the duty of every man to seek to have an influence over his fellow-men. How much influence does your knowledge of arithmetic give you? How many men are there in your village whom you are able to say are good or poor mathematicians? Probably not six, unless you were in school with them. You know which of your neighbors has a good use of language; is able to read, write, and spell correctly; understands government affairs; reads the daily papers intelligently; is acquainted with the rocks, trees, and animals. And that man's opinion has much greater weight than it would have had he not that knowledge.

Every one needs such a knowledge of numbers as shall enable him promptly and correctly to find the price of every article sold or bought. While a knowledge of numbers is absolutely essential to a man's success, there are many other things which will be of equal value.

THE VALUE OF THE STUDY OF NUMBERS AS A MEANS OF MENTAL DEVELOPMENT.

Of what value is the study of arithmetic as a means of mental development? Not only do we wish to teach facts to use in life, but we want the young to enter life with a mind fully developed. Especially should we strive for the development of those powers of the mind which render man more useful, more capable of solving the problem of life. What constitutes a man useful? Ability and disposition to make his fellow-men happier in this life and in the life hereafter. Any man who solves the problems of life satisfactorily to himself, his fellow-man and his God, is getting the greatest enjoyment, and at the same time, is most useful. This leads us to consider what the problems of life are, which we are daily called upon to solve.

They are of two kinds, — problems of government, self, family, society, church, town, state, and nation; problems of business, — first, when, where and how to invest time, strength and money, to receive the greatest real profits; second, when, where, and how to invest these profits to secure to self and family the most comforts and pleasure.

For deciding questions of government, that is, for deciding upon the best means for us to use, to subdue our own unruly passions, to conquer an obstinate child, to bring harmony out of discord in the church, or for deciding whom to select to administer the various departments of government, there are no rules laid down by which we are to be governed, and there can be none. To solve these problems, one must have a thorough knowledge of human nature, and be a constant student of human actions. The observing faculties must be cultivated in the highest degree, as must the power of judging correctly, regarding the result of our actions and that of others.

In order to obtain this discipline, attention must be given to facts; these must be learned, and the relation of cause and effect thoroughly understood. One must be taught to rely wholly upon his own observations and to form his own judgments. This can be done only by teaching him constantly to observe the conditions

requisite to produce certain results, and have him judge beforehand what will be the result if certain conditions exist. The same discipline is necessary to fit a man to solve the problems of business. He must have the power readily to see and understand all the circumstances, and judgment to decide which investment to make.

How much does the study of arithmetic contribute to such mental discipline?

Arithmetic is an exact science, and teaches us to be accurate in performing operations according to prescribed rules; it strengthens the mind, by requiring closeness and continuance of thought. Since there are no rules laid down in life for one to follow closely and accurately, it is evident that the study of arithmetic furnishes only a part of the discipline necessary to fit one for life. What is the discipline furnished by the study of the natural sciences? We will select chemistry for our illustration, and see how it compares with arithmetic; first, in point of accuracy. In arithmetic, as ordinarily taught, if one makes a mistake in his figures, he may review his work and make the necessary changes. There are no opportunities in life for such a review after a mistake is made. In chemistry, the slightest mistake in the use of substances, or the least error in the quantity, may make the most harmless thing the most dangerous. Hence the study of chemistry teaches one to be sure and get the right thing in the right quantity the first time. Is not accuracy much more practically taught here than in arithmetic?

In arithmetic, one performs a long example, requiring close and continued thought; but if he wish, he may at any time cease work and resume it at will; there is nothing requiring him to think for any great length of time. Let the scholar, on the other hand, commence the analysis of a substance, and he must think clearly and closely, and he cannot stop until each part of it is complete; that is, there are definite resting places, and no others. If he fail to think clearly, closely, and continuously upon the subject, he incurs a penalty which he will ever shun. What has been stated of this science may with equal truth be stated in a greater or less degree of the other natural sciences.

We claim, therefore, that practically, the natural sciences fur-

nish the same mental discipline that arithmetic does, and in a greater degree. And they do more than this. The study of chemistry trains the observing faculties. Everything depends upon our observation of the action of one substance upon another. As in life, we must watch the influence of one action upon another. For example, the composition of a liquid is required. One reagent after another is applied; in each instance we must watch very closely for the slightest action. The extent and exact character of the action must be noted. Should the minutest change escape our notice, we may fail to analyze the compound.

There is no way in which a person can have his powers of observation strengthened so well as by studying thus the qualities and quantities of things about him. Not only must he observe, but he must study the cause and result of each action. In this way better than any other is the judgment trained.

The study of the natural sciences teaches accuracy, closeness, and continuance of thought, as well as arithmetic; and besides, by bringing the student in connection with animate and inanimate objects, teaches him to observe, and trains his judgment as it needs to be trained to enable him to know how and when to act in life.

In considering the part the common schools play in preparing a man for usefulness, we have endeavored to show that a knowledge of numbers furnishes comparatively few of the facts needed in life, and that there is no reason why we should teach arithmetic simply for the mental discipline furnished.

In order to show that too much time is devoted to teaching arithmetic, we will consider the time usually given to its study, and compare the importance of the study with the time it receives. As a rule, children are in school about eight years; during this time the teacher spends one fourth of each day teaching arithmetic, and the scholar gives one fourth of the time spent in study and recitation to the same subject. In brief, *one fourth* a man's school time is spent in studying arithmetic, and one fourth the money raised for school purposes is used in teaching the child numbers. Now, from what we have already seen of its use, is there need of more argument to show that there is by far too much time given to arithmetic in our common schools? A knowledge of numbers is

a small part of one fourth of the knowledge needed for one to enter life with a fair chance to win in its battles.

Let us consider, in the second place, how much knowledge of numbers the child really gets in school, from which we shall endeavor to show that

THERE IS NOT ENOUGH ARITHMETIC TAUGHT.

Few men are further from undervaluing a knowledge of numbers than I; indeed, a practical knowledge of numbers is absolutely indispensable to a man's prosperity in any business. Every man should be able *readily* and *accurately* to perform the four fundamental operations with entire and fractional numbers; to measure lines, surfaces, volumes, and weights; to compute interest, simple and compound; to find the amount due on a note when partial payments have been made; to find the true and bank present worth of a debt due at a future time; to write notes, orders, and receipts; to perform operations in percentage, and extract roots. No child should leave the school-room who cannot do this. Have men at present this ability?

Select the men in this town of American birth, who have attended our public schools eight years, and are between the ages of twenty and thirty; propose the following questions, and require a prompt, correct answer the first time:—

Add an ordinary ledger column.

Lessen $7\frac{5}{11}$ by $3\frac{19}{37}$.

Find the value of $9\frac{7}{16}$ lbs. beef @ $16\frac{2}{3}$ c. per *lb.*

Find what was paid for 1 gal. oysters, if $15\frac{2}{5}$ qts. cost $\$13\frac{1}{8}$.

Find the amount due 3 yrs. from date on a note for $475.25 given for 5 mos. without interest, on which $75 was paid annually.

Find the difference between a note of $263.19 for 7 mos. 11 da. @ 5 per cent., discounted by true and bank discount.

Find the contents of a woodpile with an ordinary foot rule.

Find the face of a note for 3 mos. 7 da. @ 7 per cent., which will yield $942.26.

What per cent of correct answers will you get? Probably not more than ten per cent; and you believe that among such people

we ought to get at least eighty per cent. If these things be so, is it not conclusive proof that there is not enough practical arithmetic taught?

HOW SHALL WE TEACH MORE ARITHMETIC IN LESS TIME?

We have no method, as some claim to have, by which the whole subject can be taught in a few hours. This knowledge can only be obtained by hard work on the part of both teacher and scholar.

Have a thoroughly competent man at the head of the school system in each city and town. Let him place and retain in every school-room a live teacher; one who has prepared himself for the commencement of his work, and has learned so much that he knows he cannot become or remain a good teacher without constant study of the subject, the method of teaching it, and the disposition of his pupils; one who loves study, loves teaching, loves children; one who is interested in the welfare of each pupil, and realizes that he is to fit him to be the architect of his own fortune; one who has a definite method of teaching each principle of numbers, as well as every other subject.

Do not allow the scholar to commence the formal study of numbers too young. Time is saved by teaching in the early part of the child's course those things which he loves and naturally seeks to know. Who ever heard a child, uninfluenced either at the time or by previous training, ask how many five sevens are? Who has not heard the child ask, "What is the sun, and why does it shine?" "What makes it rain?" "What flower or plant is this?" "Where do the birds go in winter?" Now, if the Creator, knowing everything, its cause and result, has so constituted the child that he desires this knowledge, shall we, finite creatures, say that he should not have it? Teach the child what he really wishes to know, and he will learn and remember it. Try to teach him what he does not care to know, and you have a task we do not covet. Try never to keep a child studying any lesson that he does not love.

Having taught other things rightly for a time, the child will desire a knowledge of numbers; then teach them systematically. Teach but one thing at a time, and have that thoroughly taught and

learned. Always teach numbers with what the child sees before him. When the principle is understood, then speak of things which he knows, but does not at the time see, as, How many are five cows and three cows? When the principle can be applied to this class of examples, the name of the objects may be dropped.

When any principle has been learned, have it applied at once with simple practical examples which the scholar will understand. Give all the practice necessary that it may be understood and fixed, and no more. Exclude all complicate examples with large numbers.

As far as possible and practicable, have every example taken from actual life. One woodpile measured by the student will do more toward teaching him to find the contents of a volume than will the performance of ten pages of examples.

Have every operation explained *clearly* and fully; not, however, to see how many words can be used, but as concisely as possible state just what has been done, and no more.

Teach only those subjects and principles which shall be of use to the man.

The reading and writing of large numbers, much of compound numbers, duodecimals, alligation and the like, are useless, and have no right to be taught at the expense of numberless other things more interesting to the child and useful to the man.

In review: the work of the school is to furnish those facts and prepare the student to acquire those facts which he will need, and that mental discipline which will enable him successfully to solve the problems of life.

Arithmetic receives more time in the present school system than its value in furnishing the above facts and discipline will warrant. There is not enough of numbers taught to fit a man for ordinary business. The remedy lies in having proper supervision; having permanent live teachers; having the study of numbers commence later; having the subject so taught that the child shall love its study; having one thing taught at a time; having practice upon simple practical examples; having every operation clearly and concisely explained; having every unnecessary subject and principle omitted.

Observe these conditions, and the day is not far distant when it can no longer be said "Our Schools are sacrificed to Arithmetic."

PRIMARY SCHOOLS.

So much has been written and said of late years about reform in the management of primary schools, so many illustrations given of the new methods by which it is asserted that they may be far better taught than they have been by the old methods, and of the "object teaching," which is claimed to be a charming addition to the vehicles of knowledge in this grade of schools, that the subject would seem to be well nigh exhausted; at any rate, that the patience of educators and the public can bear no more.

But no practical subject has been exhausted, in any true sense, so long as it has failed to secure the foothold for which its discussion was undertaken; and God forbid that the patience of those concerned in the work of education should grow weary, and lead them to intermit inquiry, until, approaching all novel suggestions in a transparently candid spirit, and an enthusiasm for the true and the right that will not be baffled or diverted, they have gathered into their intellectual granaries every kernel of the seed-corn of fresh, vigorous thought that has been brought to fruition for the uses of the world.

And the efforts of the advocates of reform in the management and instruction of primary schools have not as yet succeeded to any great extent in remodelling their construction and transforming their methods. Here and there, it is true, school committees and teachers have penetrated with appreciative admiration and ardor into the central vitality of the new philosophy; have grasped its realities and been baptized into its informing spirit, — and so have made marvellous and auspicious overturns in the work of their school-rooms. But most school authorities and teachers seem to be still going on, in the main, in the well-worn ruts of custom. Their use of the new suggestions is limited to a few slight incidental modifications of the existing ways, or additions to them, while the substantive processes of their schools have the same old character, and grind unnaturally and heavily along in the same old fashion that has distinguished and cursed them for a hundred years.

I do not make these broad assertions from actual knowledge, for I have not opportunities to visit many schools. But the indices

that have produced such convictions are too marked and numerous to mislead. For instance: in the debates that follow the papers that may be read before educational assemblages on themes connected with reforms in the work of primary schools, how many there are to denounce all such suggestions of reform as superlative charlatanism, how many others to touch upon them in a tone of contemptuous quasi laudation, as though they were mere baby-house reliefs of the real labors of a scholar, and how many more to question about them, in evident ignorance of their practical operation.

A debate, intense in spirit and interest, lately occurred on the subject of the management of primary schools, in a gathering of men holding important official connection with the schools of New England. One of them, who has the control of the education of thousands of children, developed his methods, which involved an immense deal of spelling from the nonsense columns of the spelling book.

"But if you require your teachers to spend so many hours every day upon spelling lessons, where do they get time for anything else?" asked one of the company.

"I should like to know what you can do with primary schools, *except to keep them reading and spelling?*" said the former, in honest reply.

What to do with primary scholars except to keep them reading and spelling! I heard the remark in utter amazement. So, then, all the literature into which lovers of their race, urged by a vital and holy inspiration, have coined their minds and hearts of late years in an effort to strike down the artificial, stultifying methods that have been in vogue in our schools, strip off the strait-jackets that our little ones have been compelled to wear, and induct them into pathways of genial and delightful endeavor, according to the order and the attractions of nature, — all the practical illustrations of the direct feasibility of these reforms, that have been presented in manifold and striking ways, have passed by the eminent and honored educator who uttered this astonishing remark, without securing from him the slightest attention; as though they were only so much idle wind! He is still groping among the dark ages; and the thousands of children whose daily studies he prescribes

and regulates — heaven mercifully bestead them! — are kept at the performance of tasks that violate every principle of true culture, and make the school-room, which should be one of the most attractive places in all the round of childhood's experience, a scene of unmeaning and hateful labor. And does this example stand alone? Must it not be accepted as the exponent of a wide-spread state of things?

"What is this new style of teaching, that you and others are trying to introduce?" said a friend to me, a month or two since, who is at the head of a very popular and prosperous private school, in which he educates from two hundred to three hundred boys; "what is this that I hear so much of about object teaching? There is arithmetic, for instance — how do you bring object teaching to bear on that?"

I explained that the relations and combinations of numbers should be illustrated by actual facts; that it should be visibly demonstrated that *three* and *two* make *five*, two *threes* make *six*, three *threes* make *nine*, and so forward.

"Stuff and nonsense!" interrupted the pedagogue, impatiently; "better to teach the figures and the multiplication table just as we used to learn them ourselves, as acts of memory. Put the scholars down to master them out of whole cloth, through the medium of good hard work. A fig for your visible demonstrations! They'll find out for themselves, sooner or later, that it is all true."

Yes; take the easiest and cheapest course. Set lessons in the text-books and compel the memory to master them, no matter though not one ray of intelligent meaning may scintillate among the symbols that it painfully and disgustfully labors upon! A fig for visible demonstrations! It will all come clear sooner or later. Nature, in the process of her merciful development, will finally extricate the brains of the children from the dismal muddle into which the lazy tyranny has involved them, which you name — *education!*

Is not here a very significant exponent of the prevalent condition of the work going on in the schools?

Once more. A delegation from the school committee of one of our important towns was lately visiting a school in another locality:

"What shall I do for them?" asked the teacher of a room into which they had entered, of a friend who accompanied them. "Shall I show them some of our improved methods? Shall I give them an object lesson, — a dictation exercise, — a specimen of map or inventive drawing, — or what?"

"Give them a recitation in arithmetic," was the reply. "That is the prime standard of good teaching in their eyes."

Now if the school committee of a prominent town in the Commonwealth still hold to the old idea that the prompt and successful working out of arithmetical problems is the radical test of good teaching and a good school, — an acquirement, whose place among the diversified treasures and forces of the intellect is so exceedingly narrow and limited, and whose uses maintain so insignificant a part among the expansive and ennobling results of a generous culture, — may we not reasonably conclude that other school committees, without numbers, are cramped by the same notions, and that the schools under their charge are correspondingly mismanaged and misdirected?

I think I cannot be mistaken, after so many and various evidences of the state of public opinion on this subject, in concluding that reform has not taken place to any great extent in the management of primary schools.

And yet the opportunity is so ample, and the object so noble, that the spirit chafes to have the subject enter at once into the life-springs of thought among those who have charge of our schools, and the transformations universally effected that are dependent on the adoption of the new methods. For it is not merely a few reliefs to the old routine of tasks that we urgently clamor for, — it is not that an "object lesson" may be thrown in between the spelling and the multiplication table, or any surface work of such a kind; but it is a renovation of the whole philosophy, spirit, and methods of school management, so entire, so vital, as to make the school-room a totally different place from what it used to be; its atmosphere fresh and other, — its inspiration changed from force to joyous alacrity, — its *toil*, while no particle of sturdy, tasking endeavor is intermitted, transmuted into only so much *play*, — its dull lifeless routine displaced by charming and effective variety.

So real is all this, so free from one particle of exaggeration are these claims, that it is only trifling with the great subject to attempt to modify the old methods by any little dashes of the new. Reform must begin at the root of the matter, and freely produce all its admirable effects.

What shall induce school committees and teachers to believe this? I am led to think that to remould entirely the methods of a school system is regarded as so difficult a task, as to be beyond the reach of those possessing only the ordinary facilities for the management of schools; that the schools in Oswego, Boston, and elsewhere, which are referred to so often as models of the practical working of the new system, are not accepted as demonstrations of universal possibilities, but are set aside as being favored by extraordinary conditions not easily attained, and taught by those possessing rare gifts and peculiar culture, with whom the common run of teachers cannot compete. I am moved, therefore, — and this is the express object of the present paper, — to describe in detail, without a particle of exaggeration, the results of a four-years' trial of the new system among the primary schools of one of our Massachusetts communities, embracing fifteen hundred children; in order to show what may be accomplished under such circumstances as pertain to the schools of all our communities of any considerable size, where a due degree of interest in the cause of education prevails; where, for instance, the children are like the average in our thickly-settled towns, being of foreign birth, and the teachers are just like the "common run" of teachers, — that is, who have been selected in the ordinary manner; and not a seventh part of whom have enjoyed the advantages of a normal education, while not a solitary one has been a member of a training school, and where no extraordinary conditions have been in possession, to give eclat and special facility and assurance to the undertaking.

Neither will the details be limited to the issue in carefully-graded schools alone; but, in the most important regards, will include partially graded and even wholly ungraded schools. The only special advantage that has accompanied the undertaking, is the fact that the school committee, teachers, and superintendent have *had an enthusiastic faith in it;* faith that it was grounded in truth, a follow-

ing after nature, the rule of a normal and healthy development, and *must succeed;* and so put themselves at work in their several spheres of duty, one and all, with an intense and devoted enthusiasm, to actualize it. And this advantage, of course, may be attained anywhere and everywhere.

Premising that the age of the classes that we are now to examine is a little above nine years, and that the most of them have been in school from three and a-half to four years, we will proceed to find out what they know, and what they can do. And first we will take them up in various exercises pertaining to that most important of all the studies —

THE STUDY OF LANGUAGE

A lesson is selected from those pages of the reading-book which include the portion that the teacher informs us the scholars have been practised upon, and they proceed to read in turn. They do so promptly, intelligently, and without hesitation, modulating their utterances exquisitely, perhaps, if the teacher be a fine reader herself, — for modulation in reading with young children, is strictly a matter of imitation. But the noticeable point is, how readily they attack and pronounce the words. Does any one stumble over a word, or pronounce it in a slovenly manner, — one who has been irregular in his attendance, and is therefore comparatively unfamiliar with the lesson? The class are told to analyze the word phonetically, in concert, and at once they give, clearly and distinctly, the successive sounds that make up its correct pronunciation, which the bungler takes from their dictation, and goes on. But for a class to read from pages on which they have been drilled is a very unsatisfactory test of their knowledge of language; for it may be mere memorital parrot-work. We must take them up in a part of the book which they have never had assigned as a lesson, perhaps have never even read; we do so, giving each one a minute's pause before he reads his portion, that he may run his eye over it, and acquaint himself a little with the sense. And, in the prompt, accurate, and intelligent utterance of these unfamiliar sentences, we realize how admirable must be the methods by which the children have been taught.

We now turn back to the portion first read, and the teacher puts out word after word to be defined. The definitions printed at the head of the lesson in the book, which oftener mislead or confuse than instruct, are not accepted. The children must couch their explanations in their own language, and furthermore, must introduce the words they are defining into sentences, differing from those in which they occur in the book. What a brisk, happy emulation they show in this exercise! Here, plainly, is one of the methods to make good readers; to teach a knowledge of the meaning of the words that may be read.

Now the class is directed to prepare for a dictation exercise. Out come the lead pencils, — for ink is not allowed in the primary schools, — the teacher supplies each one with a strip of paper; and they await the work they are to do.

Two or three simple sentences — simple, for there is reason in all things, and these are quite immature children — are distinctly rehearsed to them, and they are told to write them. The names of persons and of places may be introduced, to test their knowledge of correct capitalization; and an exclamation made, or a question asked, to prove whether they can punctuate correctly. Suppose the sentence to run something like this: —

"John and Susan travelled together from New Bedford to Taunton. What do you think they saw on the way? Four carriages with one horse apiece, a cart with two oxen, seven men, nine women, a camel and an elephant."

After a few minutes the work is done, and the papers are collected and examined. The chirography is found to be remarkable for children so young; the letters, for the most part, being gracefully and handsomely formed, and the whole exhibiting an entire command of the pencil. Some of the writing is finished enough to shame many an adult penman. But it is not the writing alone that is satisfactory. Some of the papers have the capitalization and punctuation absolutely correct, while the most are very creditable in these regards.

"How is this?" ask some of the visitors, in no little wonder at the excellence of this result. "How can children so young be taught to write so very well, and that not by copy, but by dictation?"

"Ah," answers the teacher, "they began to learn to write in script after they had been in school only six months. It is as easy to begin with script as with printing, and then we have an accessory helper towards giving the scholars command of their hands, and power to use them at their will. I will show you."

She touches her bell and bids the class prepare for an exercise in drawing. As many are sent to the black-boards as there is room for, and the rest make ready their slates. Then all manner of geometrical figures are called for in succession, — angles of all kinds, parallels, horizontal and vertical lines, curves, circles, squares, rectangles, octagons, hexagons, cylinders, rhombs, rhomboids, and whatever else may be thought of among geometric forms. And the scholars make these figures, not in a hesitating, awkward, unsightly manner, producing cramped, irregular lines, and distorted curves, but they handle their crayons like artists; they describe their lines rapidly, yet with admirable straightness; they sweep their curves symmetrically and gracefully; they run lengthened parallels, both straight and curved, with so much rapidity and precision as to manifest trained observation as well as trained muscles; and the youthful geometricians accomplish all this with joyful enthusiasm which proves that it is play to them, although fraught with most important effects. The teacher's word is made good, that they have a potent helper in the exercise of writing. Children who can draw so well, can surely learn very readily to write.

Word is given to erase the geometrical figures, and make two minute lines crossing each other at right angles, as the nucleus of a figure in inventive drawing. The lines are made as prescribed; the artists then pause a few moments to devise the kind of figure they will sketch, and then they begin. Built on and around that little starting point, forms gradually appear, many of which are singularly ingenious and beautiful, — creations replete with all the elements of genius. The taste of one scholar runs to straight lines and angles, and his invention is characterized by a severe simplicity. The taste of another delights in curvilinear and varied forms, and his production abounds in graceful curves and intricate devices. But almost all are wonderfully symmetrical and pleasing.

The manufacturers of carpets, shawls, and other fabrics having inwrought figures, might find many a charming pattern among the creations of these young hands.

One figure completed, a different kind of centre is suggested, or the scholars are allowed to proceed according to their own fancy; and other forms, of equal but variant beauty and skill, are wrought out.

That exercise over, the sounds of the letters are called for, — vowels and consonants, — and given in concert, according to the designating marks, which are written on the black-board. Then words are spelled phonetically from the reading book or spelling book, every sound being given distinctly, separately, and with precision, the value of the exercise depending on the accuracy with which it may be carried on.

Then the examiner writes on the board words that the scholars have never seen; even such as have four and five syllables and difficult combinations of consonants, carefully designating the proper sounds of the vowels, etc., and the accented syllables, and the children pronounce them nearly as fast as they are written.

The subject will be continued in the next number of the *Teacher*.

H. F. H.

ENGLISH GRAMMAR.

Almost universal dissatisfaction is felt at the present time with our text-books in English grammar. The feeling is manifest everywhere, among committeemen as well as teachers, and appears in the discussions of almost every association or institute of teachers.

The recent meeting of the American Institute of Instruction was not an exception to the general rule, and a considerable portion of the last day of the session was devoted to fault-finding with present methods of teaching this elementary science, interspersed with suggestions of improvement in various directions. These last seemed, however, rather vague and general, than distinct and definite and practical.

I therefore beg the attention of the readers of the *Teacher*, in this and in two or three papers to follow, to a consideration of a

few of the most important facts, as I regard them, relative to text-books and teaching in the matter of grammar.

Let us then, first of all, ascertain precisely what the difficulties are, and then see if there is not a genuine remedy.

It is customary among grammarians to consider the science of grammar under four heads, viz.: Orthography, Etymology, Syntax, and Prosody. Of these four, the first two classifications regard simply the *verbal forms* of words, either in their primary character, which we call *orthography*, or under the modifications which they assume in discourse, which we term *etymology*.

Now, manifestly in regard to *these two* departments of grammar, there can be in the main but one method of *presentation*, and but one method of acquisition. These primary and modified *forms* of words are simply to be *memorized*. The memory can be aided by systematic classification, to some extent, but all that can be gained in this way, is so obvious, that our best text-books, whether in English, Latin, or Greek grammar, present little substantial variety. Nor do the methods of teaching differ very materially *here*. It is simply and only a work of the *memory*, and this work can only be successfully accomplished by direct *labor* on the part of the pupil, and constant *drill* on the part of the teacher.

In these departments, moreover, teachers are little inclined to be dissatisfied with their text-books, or with their success. Even in the case of English grammar, if I mistake not, where there is almost universal complaint, in both the particulars above mentioned, the *source* of difficulty is not found in the methods pursued by our grammarians in *these* departments. The difficulties are found, for the most part, in the department of *Syntax*. I appeal to teachers if this is not the fact.

Who find any difficulty in teaching *spelling* or orthography? Who find any trouble, either in their text-books or elsewhere, in teaching the *formation* of cases, numbers, moods, and tenses, &c., which is the substance of Etymology?

Nothing, certainly, can be more simple and easy than this. Here, the thing to be learned is as intelligible and definite; the pupil's success, if he applies himself, as marked and decided; and

the thing acquired as useful and as practical, as anything to be attained in arithmetic or in geography.

This part of English grammar is certainly of the very highest practical importance. All persons complain, that they received *in after life*, no *practical* benefit from their study of grammar. No one certainly can say, if he made a reasonable effort when at school, that he received no practical benefit from these departments of grammar.

How indispensable that every person should know how to form properly number-forms, case-forms, gender-forms, person-forms, mood or tense-forms.

How indispensable that every person should know the tense formations of the *irregular* verbs especially. All this is as practical and as important as the multiplication table, or any processes in arithmetic.

Whatever there may be said about the merits or demerits of the study of English grammar in general, there certainly can be but *one opinion* respecting the acquisition of the *Orthography* and the *Etymology* of English grammar.

Again, the view taken by many teachers, that considerable maturity of mind is necessary to the acquisition of grammar, has no especial force in the departments of grammar under consideration. On the contrary, these parts of grammar should be learned *early*. Indeed, childhood is the very best time for the acquisition of *those* facts. As we have said, it is almost entirely a work of the *memory*, and childhood is the golden period for memorizing.

Nor, indeed, are there *here* any difficulties involved, which are beyond the mental strength of childhood in any direction. It should be remembered, indeed, that Etymology properly considers *forms*, not *relations*. Hence all discussions respecting the latter are out of place *here*. These belong to another department of grammar, and to greater *maturity* of mind in the pupil. The pupil should understand clearly that *now* he has simply to do with verbal *forms*, and this can be accomplished successfully, in whatever language, — English, Latin, or Greek, — in childhood or early youth.

Let me now ask those teachers who complain of bad grammars and bad success in teaching grammar, whether they have secured

proficiency to begin with in these departments of grammar of which I speak, and which present no difficulty. Have the *forms* of words, both original and modified, the original spelling, the plural-forms both of native and foreign words, the possessive-forms, the various gender-forms, the tense-forms of the *irregular* verbs, &c.; have all these verbal *forms* been perfectly mastered? If so, the pupils who have made this acquisition have something in the line of grammar, though they never learn anything else, that *will be* of great practical value to them in after life; and of this they themselves cannot fail to be conscious.

Passing now Orthography and Etymology, we come to Syntax. This we hope to consider in the next number of the Teacher.

H. R. G.

HAVE AN EYE UPON THE FOUNDATION.

In a recent examination of candidates for admission to a high school, 142 were examined, and 118 of them admitted.

The examination in arithmetic fell under my own supervision. The paper comprised twenty questions and problems, the first of which was this: in the number 8,421, the 4 expresses how many times as much as the 2? Twenty-eight gave the correct answer, twenty times as much. Some of them gave it directly from inspection; but most of them obtained the answer by dividing, in a formal manner, 400 by 20. Two others obtained an approximately correct answer by dividing 400 by 21, the error, probably resulting from heedlessness. Thirty-two others gave for an answer, ten times as much, discriminating correctly in regard to the places of the figures, without regarding the difference in the figures themselves. Of the remaining eighty answers, not one indicated any knowledge of the fundamental law of numeration. The answers were various, and absurd as can be imagined. Thus: 2, 4, 200, 400, 380, 398, $\frac{1}{2}$, $\frac{1}{4}$, .2, .02, etc., many attempting no answer whatever.

The age of these candidates averages perhaps a very little short of fifteen years. Many of those who failed of admission will not

return to school again. And many of those who were admitted, will drop out of school before they reach the last year of the course, to which alone arithmetic is assigned.

We have no reason to suppose that this examination is peculiar. Other examinations may reveal facts equally startling. Here, then, is a large class of young men, who have finished their school education, ignorant of the very rudiments of arithmetic! Have they received from our schools all they are entitled to? Is it necessary that so many young men shall enter upon the practical duties of life so poorly qualified? Shall the boasted improvements in education always exhibit such disgraceful failures?

There is much said in these times about the disproportion of time spent upon arithmethic. That must give place, it is said, to one and another of the new subjects that are crowding into our schools.

In view of these facts, it becomes teachers, and all interested in education, to consider whether such results are satisfactory, or all that ought to be expected. If they are not sufficient, and not all that could be reasonably looked for or demanded, then the cause of the deficiency should be sought, and the remedy applied.

If the cause be found in defective methods of teaching, the remedy is obviously in the improving of those methods. If it be in the lack of time, then it becomes necessary to consider the relative importance of arithmetic, and those new studies which have been allowed to divide the time with arithmetic. If the cause be in the nature of the subject and of the youthful mind, then a majority of our scholars may as well despair of a competent knowledge of arithmetic, and devote their time to something that promises better results.

This question, doubtless, affords room for difference of opinion. But it is decided, I believe, by competent judges, among whom may be reckoned the late lamented principal of the Boston English High School, than whom no one would demand a better judge on this subject. In his lecture delivered before the American Institute of Instruction, in 1834, he says: the power of reasoning is an essential attribute of man, and if there be any department of human science attainable by all, it must be mathematics, since there is no

other kind of reasoning, in which the data are so well defined, the steps of the process so short and ultimately connected, and the result so perfectly satisfactory.

The authorities are ample, that though all minds are not equally adapted to mathematical reasoning, yet they are sufficiently well adapted to secure, with rational teaching and zealous learning, on the part of a great majority of those who graduate from our grammar schools, far better results than are shown in the examination here described.

Before it be determined that insufficient time is now allowed for arithmetic, it would be well for teachers to look well to their methods. It may be that their theory is faulty. It may be that they overlook something in the very foundation, or assume, contrary to fact, that the foundation is all right; and thus it is, that the superstructure falls at the time of trial.

I was once sitting by a distinguished teacher, while he was conducting a recitation on the laws for scanning Latin poetry. As a scholar was repeating a rule in which the word *penult* occurred, I suggested to the teacher a doubt, whether the scholar knew the meaning of that word. Of course he does, answered the teacher. But on trial, it was proved that he and several others in the class were not possessed of that knowledge. The teacher was astonished; and doubtless has ever since looked more carefully to the foundation he was building upon. Had the teachers of those candidates been more careful to *know* that their pupils were well grounded on the laws of numeration, before permitting them to proceed blindly in the application of those laws in complicated processes, how much of the disappointment and mortification of both teachers and scholars might have been spared, and how different might be the future of many of those scholars.

It becomes those teachers who think the shortest way to get their pupils into the High School, is to teach them the forms of knowledge only, spending little or no time upon the principles which underlie those forms, to consider whether they are consulting the best interests of those pupils, even if they should succeed in entering them to the High School. Scholars who enter the High School with barely sufficient rank to admit them, and that obtained

chiefly from other studies than arithmetic, commence the study of algebra at a great disadvantage. The course of studies is arranged on the presumption that the scholars, on entering, have sufficiently completed the grammar school course. What then shall be done with those scholars, who have not sufficient arithmetic to ground algebra upon? Shall that deficiency be ignored, and they be required "to deliver their tale" of algebra, and be charged with "idleness" or stupidity, if they complain of their hardship? Surely "they are in evil case," as many a teacher might testify. Or shall a teacher ignore the course of study, and, looking well to the foundation, teach algebra by beginning with the necessary principles of arithmetic? Will not the latter course conduce, not only to the success of the teacher, but also to the success and happiness of the scholar.

A course of study, running through several grades of schools, fails of its object, unless the scholars pursuing it shall, to a certain degree, complete the several studies in their order. A deficiency here and there will be sure to cause disturbance in the succeeding parts of the course, especially when one study depends upon another, as in the mathematics. There is a duty devolving upon each individual teacher, to see that all is right in his part of the course. But no teacher should ignore the deficiencies of a subordinate teacher, and present the absurdity of attempting to build upon an insufficient foundation. J. S. R.

THINK, SPEAK, AND LIVE TRULY.

"Thou must be true thyself,
If thou the truth wouldst teach;
Thy soul must overflow, if thou
Another soul wouldst reach;
It needs the overflowing heart
To give the lips full speech.
Think truly, and thy thought
Shall the world's famine feed;
Speak truly, and thy word
Shall be a fruitful seed;
Live truly, and thy life shall be
A great and noble creed."

Editor's Department.

TEACHING.

The criticism is frequently made in regard to our public schools, that there is but little teaching done in them. The school machinery is brought to a wonderful state of perfection, and run under a high pressure; but the production is simply so much text-book. A high class-average on a text-book examination is the end and aim of all school work.

That this criticism applied sweepingly to our schools is unjust, we well know; yet there is some foundation for it. All acquainted with the general working of our school system know that much which passes for teaching is not teaching, and none know it better than teachers themselves; and none deplore it more than do many of them.

They who thus criticise are apt to charge this narrowness of purpose and lowness of aim upon the teachers. But it must be remembered that but few public school teachers are free to arrange the course of study for their schools, or free even to make the assigned course subserve what may seem to them the best interests of their scholars. They are parts of a system, and must do the prescribed work. Every city and large town must have its pyramid of schools, its sides sloping up from the primary through the grammar to its apex, the high. In cities large enough to admit of such regular gradation, this pyramid must be built up in steps; so many rises to the primary, so many to the intermediate and grammar, etc. Each step is built of so much reading, spelling, arithmetic; so much penmanship, grammar, geography, etc. Now, each must run evenly all round the pyramid; so the workmen assigned are so busy getting in the full amount of material in the given time, that they cannot pay much regard to the whole structure, or consider whether the material will hold well together. They do what is assigned them; and when the measure has been applied, and the right elevation proved, they have performed their part, and are commended as good workmen.

Many as are the advantages of a finely-graded system of schools,

there are some disadvantages. In developing a child into true manhood or womanhood, the division of labor cannot be wisely made so minute as in manufacturing a pin. However great the number of teachers, each should have the ultimate result in view, and superintendents and examiners who have authority to direct the work and pronounce upon its character, should be vigilant in detecting all sham work, and conscientious in approving only the true; else much evil as well as much good may come from our graded systems.

What is teaching? Let us illustrate. Take penmanship. Some years ago there appeared in Boston, one A. R. Dunton. He was a masterly penman, and understood the whole matter of penmanship, root and branch. He had a system of writing he wished to introduce into the schools. He called the teachers together and explained it to them; gave them a series of lessons to show them how to teach it; went into the schools and showed how to teach it to the scholars; and the consequence was a remarkable change in the condition of this branch of study in the Boston schools. Before, writing was practised in all the schools a stated length of time, and a certain number of books used up. The copy was placed before the scholar, and he was told to work slowly and try to imitate that copy. Some having a natural gift in that direction succeeded pretty well, but most would write a very bad line under the copy and spend the writing hour in imitating that. In only a few schools was there a different state of things. It is evident that though there was much that was called writing practised, there was very little teaching.

But mark the change. The teachers had found out there was an art of penmanship, its principles had been explained to them, they understood it, they were earnest and enthusiastic in regard to it. They no longer spent the writing hour adding credits or writing letters to their friends; but were at the black-board showing what was to be done, and how it was to be done, anticipating difficulties and showing how to overcome them; were going from scholar to scholar giving such individual instruction and help as was needed. This was teaching, true teaching. The result was marvellous. The teachers taught writing, and even the most unskilful scholars learned to write.

Again. Some months ago, a scholar in the second class of one of our city grammar schools was troubled and almost sick, because she had so many pages of history to learn. She had been absent on account of sickness, and was required to make up her lost lessons. The great difficulty was that she must recite all these pages word for

word. We inquired if her teacher usually compelled her class to recite in that way, and her answer was, "yes." This mode of learning history was once quite common. In Dorchester, a very respectable gentleman of the old school came in one day to examine our class in history. His first question was in regard to the discovery of America. A scholar commenced to give an account of it. "Stop," he said, "let me find the place." That found, he put his finger on the line, and said, "now, go on." We had to explain that the scholars had not learned the words of the book, but had sought rather the facts of history. He acquiesced at once; but such was not the method of study and recitation in his day.

Now it is obvious that learning page after page of some historical text-book to recite verbatim, is not studying history; nor is simply hearing such recitation teaching history. Go into the alcove of the Boston Athenæum devoted to historical works, and as you look upon the long rows of books, one above another, consider what progress in history a scholar can make upon that old method! It could not much exceed that of a mouse which had commenced gnawing some book in one corner of the alcove.

But let the teacher understand history, be able to unfold the principles of its development, map out its great divisions, give an outline of its great facts, show how these may be associated and retained in the memory, waken a desire to know in regard to important historical events, and indicate where in the assigned text-book or in other works the desired knowledge can be found, and he is teaching history, and putting his scholars in a position to avail themselves, if they wish, of all historical knowledge.

So of arithmetic, grammar, geography, and all branches of school study. Merely compelling scholars to learn lessons from books and hearing them recited is not teaching. It does not require a very high order of mind, nor much skill, to do that It isn't worth the minimum salary paid in our most parsimonious towns. But teaching is opening up these subjects to young minds, calling the faculties of these minds into activity, removing individual hindrances, encouraging and directing. Not the text-books are to be taught, but the subjects the text-books aim to set forth. The teacher therefore must be greater than the text-book, and must understand the conditions and modes of action of the minds with which he has to do. The best there is in him will be taxed to the utmost to secure the highest results. Cramped he undoubtedly is, and must be, in working out

the part assigned to him in a carefully-arranged system, but he still may ever have the great ends of education in view, and so teach as to secure to his pupils the greatest ultimate good, rather than to enable them to get the highest per cent at the next examination for promotion.

BUSINESS ARRANGEMENTS.

Mr. Joseph H. Allen, publisher of *The Student and Schoolmate*, has removed his publishing office to the *Educational Room*, and will, in addition to his own business, take charge of the office business of the *Massachusetts Teacher*.

This arrangement is very satisfactory to us, and will prove advantageous, we trust, to all concerned. Our office will now be found open daily, at least from *nine* A.M., to *five* P.M.; and Mr. Allen, or his assistant, will always be present to give information or transact business.

MEETING OF DIRECTORS.

The Board of Directors of the State Association met at the Educational Room, Boston, June 18.

It was voted that the Annual Meeting of the Association be held in Boston about the middle of October, and that the meeting be held in three sections, the same as last year.

C. M. Cumston of Boston, A. C. Perkins of Lawrence, and A. P. Marble of Worcester, were appointed a Committee to prepare a programme of exercises for the High School section; D. W. Jones and J. F. Blackinton of Boston, and A. E. Winship of Bridgewater, for the Grammar School; and L. Dunton of Boston, E. I. Comins of Worcester, and B. F. Tweed of Charlestown, for the Primary.

The general arrangements for the meeting were left with the President, Secretary, and Treasurer.

ANNUAL MEETING.

The Annual Meeting of the Massachusetts State Teachers' Association will be held in Boston on Thursday, Friday, and Saturday, the 20th, 21st, and 22d of October. The programme of exercises will be published in our next number.

CHANGE OF NAME.

THE Theatre heretofore under the management of Mr. Selwyn, having passed into the hands of Mr. Charles Fechter, he has given it the name of *Globe Theatre*. The name of "Selwyn" has therefore been erased from the building, and "Globe" takes its place. The office of the *Massachusetts Teacher* and of the *Student and Schoolmate*, is Room 18, *Globe Theatre Building*, 366 Washington Street.

THE EDUCATIONAL ROOM.

TEACHERS, and all interested in the subject of education, are cordially invited to visit this room and enjoy its privileges. All the leading school-books published in this country will be found upon its shelves, and the educational periodicals. Frequent meetings of teachers give opportunities for interchange of sentiments. Regular meetings for discussion will be held on the first and third Saturday afternoons of each month. Come one, come all.

THE AUGUST EDUCATIONAL MEETINGS.

THE extreme heat of the season, no doubt, affected somewhat the attendance upon these gatherings. Still there was a good attendance, and no lack of earnestness and spirit. Some thirty States were represented at Cleveland in the national meeting. The papers read mere unusually good, and the discussions interesting and profitable. We condense from *The Daily Cleveland Herald* an account of the meeting of the National Teachers' Association. We have been unable to obtain a full record of the American Institute meeting at Worcester, and therefore postpone the account of its proceedings till next month, as also the proceedings of the American Normal Association.

MEETING OF THE NATIONAL TEACHERS' ASSOCIATION.

THE first session was held Wednesday morning, Aug. 17th, in the Central High School Hall, Cleveland, Ohio. The exercises were opened with prayer by the Rev. Dr. Bennett of Ohio. E. R. Perkins, President of the Cleveland Board of Education, welcomed the association. D. B. Hagar, of Massachu-

setts, President of the Association, briefly responded to the address of welcome, and then proceeded to deliver the customary Annual Address. We make one or two extracts: —

It is now thirteen years since the National Teachers' Association was organized, its avowed object being "to elevate the character and advance the interests of the profession of teaching, and to promote the cause of popular education in the United States." It may not be out of place to allude briefly to the origin of the association, and to the more important changes which its constitution has undergone, and to consider the advisability of making such other changes as may promise to enhance the usefulness of the organization.

The teachers who in August, 1857, assembled at Philadelphia, in response to the call which had been put forth by the presidents of the State associations, were few in number, and with rare exceptions, not overflowing with faith in the proposed enterprise. Some men of sanguine temperament, saw visions of a more comprehensive association; some talked of "Castles in Spain," and here and there was one who solemnized the occasion with his ominous silence, but who in after years was willing to assume the more cheerful part of an "original founder."

The deliberations of that small meeting in Philadelphia culminated in a resolve to establish an association comprehensive enough to include practical educators of every sort, and in the adoption of a constitution supposed to be adapted to the accomplishment of the important objects in view. The doubts which at the outset clouded the probable success of the new enterprise were dispelled by the grand results of its first anniversasy meeting, held at Cincinnati in 1858. Regular meetings have subsequently been held at Washington, D. C., in 1859; at Buffalo, N. Y., in 1860; at Chicago, Ill., in 1863; at Ogdensburgh, N. Y., in 1864; at Harrisburg, Pa., in 1865; at Indianapolis, Ind., in 1866; at Nashville, Tenn., in 1868, and at Trenton, N. J., in 1669. On account of the condition of the country, no meetings were held in 1861 and 1862, and on account of delay and difficulty in obtaining a suitable place for meeting, none was held in 1867.

Mr. Hagar then proceeded to speak of the changes which had been made from time to time in the plan of the association, and then spoke as follows: —

Now, in order to accomplish the greatest possible good, our association ought to hold within its scope, not only the wants of teachers in general, but as far as practicable the peculiar wants of each class of teachers. How to realize a view so comprehensive is a question of serious importance. The needs of our own, and the experience of some other associations, give me confidence to recommend for your consideration the organization of this association into sections or departments, each of which shall have special charge of those subjects which are its chief concern. The main features of the plan suggested are briefly these: At the meetings of the association, let a part of each day be assigned to the consideration of general educational matters, in which all the members may participate; and during the remainder of the time let the members meet in their several sections for the discussion of matters appropriate thereto.

The general session will serve to combine the sympathies of all the members in behalf of those things which present to them a common interest, and will give to all the encouraging assurance that whatever be their sphere of educational labor, they are not working alone, but are enjoying the good will and co-operation of all classes of laborers, looking towards the same grand results. The sectional meetings will furnish each those things which his particular duties require. General principles of education ought, of course, to be comprehended by every educator; beyond these, there are not a few practical matters connected with the administration of each of the various classes of schools that demand the most careful consideration. These matters, it is believed, can be discussed in sectional meetings more advantageously than in general convention.

Into how many and what sections it is best to organize the association, if into any, I will not presume to speak positively. Such thoughts as I have been able to give to this point leads me to suggest four sections, relating respectively to the supervision of schools, to normal schools, to higher instruction, and to primary instruction. Additional sections or sub-sections can be formed at any time, as circumstances shall require. The details of the plan I gladly leave to the wisdom of your excellent committee upon the revision of the constitution.

The plan of working by sections is not new. The American Scientific Association has always conducted its meetings upon the plan proposed, and to this is justly attributable much of its great success. Four years ago the State Teachers' Association of Massachusetts was organized into three sections — high school, grammar school, and primary school. Prior to that time the attendance at the annual meetings ranged from three hundred to about six hundred. Since then the number of teachers present has in no case been less than twenty-five hundred, and at one or two meetings it has gone as high as thirty-five hundred. These numbers are given advisedly, are below rather than above the truth, and they go to prove that the interest which teachers feel in an association depends largely upon the amount of thought and information which they expect to get therefrom applicable to their indivual wants.

To insure success in the proposed reorganization of the National Teachers' Association, it will, of course, be necessary to secure the co-operation of the National Superintendents' Association and the Normal School Association. Blending the three associations into one, we can preserve the advantages of each, and at the same time establish on a broad foundation an organization grand in its proportions, comprehensive in its objects, and powerful in its operations.

Parke S. Warren, of Maine, C. A. Gower, of Michigan, and H. C. Hallowell, of Massachusetts, were appointed Assistant Secretaries.

After the appointment of the usual Committees, J. W. Hoyt, President of the Wisconsin Academy of Sciences, Arts, and Letters, presented the report of t Committee upon the subject of a National University. The report stated the leading offices of a true university to be as follows: —

1. To provide the best possible facilities for the highest and most profound culture in every department of learning.

2. To provide the means of a thorough preparation for all such pursuits in life as, being based upon established scientific and philosophic principles, are entitled to rank as professions.

3. To exert a stimulative and elevating influence upon every subordinate class and grade of educational institutions, by holding up before the multitude of their pupils the standards of the highest scholarship, and by preparing for their administrative and instructional work, officers of a higher grade of qualifications than would be otherwise possible.

4. To enlarge the boundaries of human knowledge by means of the researches and investigations of its professors, — who must of necessity be the foremost men of the times in their respective departments, — as well as by the researches and investigations of other advanced minds, encouraged to greater activity and led to greater achievements by the influence of the university example.

In accordance with the vote of the Association, the following was despatched by telegraph to Thomas Hughes, author of "Tom Brown at Oxford": —

CLEVELAND, Aug. 17, 1870.

HON. THOMAS HUGHES, *care of English Consul, New York City:*

The National Teachers' Association of the United States of America, now in session at Cleveland, Ohio, sends cordial greetings, and invites you to attend its convention, which will close Friday evening, August 19th,

D. B. HAGAR, *President.*

James B. Thompson, of New York, presented a report upon the Decimal Systems of Weights and Measures. The report closed with the following resolutions, which were subsequently adopted: —

Resolved, That a universal system of weights and measures, founded upon a common standard and the decimal system of notation, are alike important to commercial intercourse between different and distant nations, and to the progress of science and civilization throughout the world.

Resolved, That it is the opinion of this Association that the "Metric" system is nearer perfect than any other that can be reached, and therefore has the strongest claims for universal adoption.

Resolved, That we recommend its early introduction into our schools and seminaries of learning, as the best means of popularizing the system, and securing its general use among the people.

In the afternoon, E. A. Sheldon, Principal of the New York State Normal School, Oswego, read a paper entitled "The Proper Work of a Primary School." Misses M. A. Lavayea and Kate Stephan, of Cleveland, gave Object Lessons to classes of young scholars.

The address of Gen. John Eaton, Jr., Commissioner of Education, in the evening, was a very able production, and was listened to with close attention. His subject was "The Relation of the National Government to Public Education."

THURSDAY.

A committee was appointed to consider the subjects presented in the address of Gen. Eaton. This Committee consisted of W. E. Crosby, Iowa; Dr. Read, Mo.; J. L. Pickard, Ill.; W. R. Creery, Md., and W. D. Henkle, Ohio.

Officers were chosen for the ensuing year, as follows: —

President. — J. L. Pickard, Chicago.

Vice-Presidents. — E. E. White, Ohio; Mrs. M. A. Stone, Connecticut; Wm. F. Phelps, Minnesota; E. A. Hubbard, Massachusetts; Miss D. A. Lathrop, Ohio; Dr. Read, Missouri; A. D. Williams, West Virginia; B. C. Hobbs, Indiana; N. E. Cobleigh, Tennessee; M. A. Newell, Maryland; J. H. Hoose, New York; Kate S. French, New Jersey.

Secretary. — John Hancock, Ohio.

Board of Directors. — D. B. Hagar, Massachusetts; A. J. Rickoff, Cleveland; Miss M. A. Rockfellow, Alabama; E. T. Dale, Arkansas; B. G. Northrop, Connecticut; J. C. Dow, Illinois; A. E. Shortridge, Indiana; A. Armstrong, Iowa; E. F. Heisler, Kansas; Miss M. E. Whittington, Kentucky; J. H. Hanson, Maine; W. E. Sheldon, Massachusetts; W. R. Creery, Maryland; J. W. Ewing, Michigan; J. Baldwin, Missouri; W. E. C. Rich, New Hampshire; John S. Hart, New Jersey; S. A. Ellis, New York; W. D. Henkle, Ohio; George Luckey, Pennsylvania; T. N. Bicknell, Rhode Island; M. C. Wilson, Tennessee; J. Dana, Vermont; R. M. Manly, Virginia; S. R. Thompson, West Virginia; O. Arey, Wisconsin; Z. Richards, Washington.

A very valuable paper, "Music in its Relations to Common School Education," was read by Eben Tourjée, Director of the New England Conservatory of Music, Boston. Music should enter into common school education for the following reasons: —

1. It is an aid to other studies.
2. It assists the teacher in maintaining the discipline of the school.
3. It cultivates the æsthetic nature of the child.
4. It is valuable as a means of mental discipline.
5. It lays a favorable foundation for the more advanced culture of later life.
6. It is a positive economy.
7. It is of the highest value as a sanitary measure.
8. It prepares for participation in the church service.

The association indulged in a little music, and finally resolved itself into a singing class under the instruction of Prof. Miller, of Illinois.

It was voted to publish the proceedings of the association, and measures were taken to provide the necessary funds.

During the afternoon session the President read a letter from Charles Davies, of West Point, in relation to weights and measures, and submitting the following resolutions passed at the meeting in Albany: —

Resolved, That the subject of changing our entire system of weights and measures and substituting therefor the "Metric" system of France, is too grave and too important to be acted upon without a very full and careful examination of all its bearings and all its consequences.

Resolved, That the committee on coinage, weights and measures be requested to publish their report to this convention, with such additions as they may deem necessary, in connection with the report of John Quincy Adams, made to the House of Representatives in the year 1821, and the lecture of Sir John Herschel, on the yard, the pendulum and the meter, to the end that the whole subject may be fully discussed, considered and understood.

Resolved, That this convention do recommend to all teachers and to all others interested in the establishment of uniform standards throughout the world, to give special attention and study to this subject, now engrossing public attention, that it may be finally disposed of wisely and for the common interests of all nations.

Resolved, That this convocation does hereby express its conviction that such changes should be made in the values of the franc, the dollar and the English pound sterling, that five francs be exactly equal to one dollar, and five dollars exactly equal to one pound sterling.

Resolved, That the committee on coins, weights and measures be and they are hereby authorized to take such steps, by correspondence or otherwise, as will, in their judgment, be most likely to give effect to the above resolutions.

Resolved, That as a means of reaching uniformity of currency, it be and is hereby earnestly recommended to all authors and publishers of elementary arithmetics, to exclude, from future editions, every currency not recognized and established by law.

Resolved, That the committee on coins, weights and measures be and they are hereby authorized to ask the attention of the Government, and of all associations for the advancement of science and knowledge, to the expediency of changing the value of the ounce Troy, and thus substituting a single weight for the three now in use.

N. Coe Stewart showed, with a class of girls, his method of giving instruction in reading music.

A discussion followed upon the "Motives and Means which should be made prominent in School Discipline and Instruction."

In the evening, J. W. Dickinson, of Westfield, gave an account of the educational systems and schools of Germany.

J. W. Bulkley, Brooklyn, N. Y., was appointed a delegate to the National Musical Congress to be held at Steinway Hall, New York.

FRIDAY.

"The Claims of English Grammar in Common Schools," was presented by J. N. Blodgett, of Rockford, Ill. A discussion followed. The exercises were interspersed with readings and music.

At the afternoon session, S. H. White, President of the American Normal Association, announced the organization of that body as a department of the National Teachers' Association.

William T. Harris, superintendent of Public Instruction in St. Louis, presented a very valuable paper on "The Use and Abuse of Text-Books." An earnest discussion followed.

The Committee on Gen. Eaton's Address reported the following resolutions, which were adopted: —

Resolved, That we heartily approve the views therein stated and so ably urged.

Resolved, That we respectfully petition Congress to make larger appropriations of money to meet what seems to us the just claims of general education upon the national bureau.

Resolved, That General Eaton, together with the presiding officers of this association, be a committee to urge the matters here referred to upon the attention of members of Congress.

Senator Sawyer, of South Carolina, addressed the association at the evening session. "What can Free Schools do for a State?" was his subject. He was able and eloquent.

The usual resolutions were then adopted, and "every body thanked." All united in singing the doxology, and the association adjourned *sine die*.

NATIONAL SUPERINTENDENTS' ASSOCIATION.

This body held a business meeting at Cleveland, and resolved to organize as a department of the National Teachers' Association. The following were elected officers for the ensuing year: —

President. — W. D. Henkle, of Ohio.

Vice-President. — W. M. Colby, of Arkansas.

Secretary. — W. Johnson, of Maine.

INTELLIGENCE.

Cambridge High School. — At the annual election of teachers, W F. Bradbury was unanimously re-elected master. Some changes having been made in the organization of the school, and Mr. Bradbury desiring to devote himself more exclusively to the Classical Department, has at his own request been elected Hopkins Master and Classical Instructor, at a salary of $2,500, the maximum hitherto paid to the master. L. P. Williston, master of the school from 1857 to 1862, with whom Mr. Bradbury was associated as sub-master, has been elected head master at a salary of $4,000.

Vacancies in the Boston Schools. — M. F. Cook, Master of the Hancock School, has resigned on account of ill health. There is a vacancy also, in the mastership of the Quincy School; and it is rumored that another master intends soon to withdraw from the service. In the course of two or three months a new school will be organized in the building now approaching completion on Madison Square. Four new masters therefor will probably be elected before the end of the present year.

Degree of LL.D. — C. M. Cumston, Head Master of the English High

School, Boston, has been honored with this degree by his *Alma Mater*, Bowdoin College; EPHRAIM HUNT, Head Master of the Girls' High and Normal School, has received a like honor from Colby University.

SALARIES AT YALE COLLEGE. —The salaries of professors have been raised to $3,000; of tutors, to $1,500.

ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE. — The annual meeting of this Association was held at Troy, N. Y. Professor Asa Gray, of Cambridge, was elected President; Dr. George Parker, of Yale College, Vice-President; T. W. Putnam, of Salem, Secretary; William O. Vaux, of Philadelphia, Treasurer. The next annual meeting will be held at Indianapolis.

BOOK NOTICES.

COMPOSITION AND RHETORIC: A Text-Book for Schools, Academies and Colleges, by John S. Hart, LL.D., Principal of the New Jersey State Normal School; Eldredge and Brother, Philadelphia; J. L. Hammett, Boston.

An examination of this book has given us a very favorable opinion of its merits. Dr. Hart's familiarity with the subject, and his long experience as a teacher, have enabled him to prepare a text-book, which, in its admirable arrangement, clearness of statement, and variety of examples, will fully meet the wants of the schools. Messrs. Eldredge and Brother have introduced it to the public in a very attractive form.

EDUCATION IN EUROPE AND AMERICA, by John W. Hoyt, United States Commissioner.

Dr. Hoyt, President of the Wisconsin Academy of Sciences, Arts and Letters, was one of the Commissioners to the Paris Universal Exposition in 1867. The duty of preparing the Report on Education was assigned to him. It was promptly written and presented to the Department of State, but the printing has been delayed. We regret that so valuable a report has been allowed to slumber so long. It is a condensed, yet perspicuous representation of the condition of education in all its departments — primary, secondary, scientific and professional — in Europe and America. The comparison between the schools for higher education on the two continents is not, of course, to our credit. But the report will render good service in the cause of educational progress, and will be warmly welcomed by educators.

THE PHILOTAXIAN GRAMMAR, by S. L. and Edward P. Howe. Chicago · JohnP. Alden & Co.

Rather a big name for a small English grammar. We will allow the book to speak for itself. "A concise and lucid guide to a knowledge of the English Language; containing a new and comprehensive system of parsing, and a complete order for correcting false syntax; and exhibiting the cases of nouns and pronouns, and the moods and tenses of verbs in a new and systematic arrangement."

MENTAL ARITHMETIC: By P. A. Towne, formerly principal of the Barton Academy, Mobile, Ala. Louisville: John P. Morton & Co.

The author assumes that all operations in arithmetic are limited to abstract numbers, and believes it better for scholars to learn to give correct answers than to go through syllogistic processes of reasoning. It looks like a pretty good book.

THE ALPHABET OF ORTHOËPY and its application to monosyllables, by Judson Jones. Saint Paul: Press Printing Co.

A small book to be used for the purpose of giving pupils practice on the elementary sounds. An alphabet of orthoëpy is given. The words are first written in orthoëpic characters, then the common characters, and then defined,

LESSONS FOR CHILDREN IN ENGLISH AND FRENCH after Mrs. Barbauld's method. Arranged by I. DeVeitelle. New York: D. Appleton & Co.

A perusal of M. Marcel's excellent work on the "Study of Languages" suggested the preparation of this little work. Reading is the first end to be attained, understanding the thought expressed in the native idiom. The English is given on one side of the page, the French on the opposite. The phrases are simple, such as are used in common speech. The book therefore introduces the young to the study of the French language in the easiest and pleasantest manner.

ROBERTSON'S LIFE AND LETTERS. A cheap and complete edition by the Harpers. It is only necessary to congratulate the public that this excellent book comes to them in so cheap and attractive a form.

THE ROB ROY ON THE JORDAN. By J. Macgregor. With map and numerous illustrations. New York: Harper & Brothers.

The Rob Roy is a canoe. One fancies that it is far pleasanter to read Mr. MacGregor's account of his canoe sailing through the Suez Canal, on the Nile up the Jordan, than to actually make the voyage with him. This narrative is certainly pleasant reading. His mode of travelling enabled him to make careful observations, and to see much that had escaped other travellers. He therefore gives us a very lively picture of the Holy Land of the present time.

THE UNITED STATES INTERNAL REVENUE AND TARIFF LAW, passed last July, with such other acts relating to internal revenue as are now in force compiled by Horace E. Dresser, is a timely and useful book from the same publishers.

SPEECHES, LETTERS AND SAYINGS OF CHARLES DICKENS. To which is added a sketch of the author by George Augustus Sala, and Dean Stanley's Sermon.

The public are eager for anything relating to Dickens. Some of these speeches and letters show him in his most genial moods. One of the things he could do, among many other things, was to make an after-dinner speech, and good speeches too on other occasions. Dean Stanley's sermon is a fine tribute to his character and genius. This volume, also, from the Harpers.

THE NEW TIMOTHY: A novel by W. M. Baker.

THE GENIAL SHOWMAN: Being reminiscences of the life of Artemus Ward, by Edward P. Hingston.

TRUE TO HERSELF: A romance by F. W. Robinson.

JOHN: A love story by Mrs. Oliphant.

MISS VON KORTLAND: A novel, by the author of My Daughter Ellinor. These, from the Harpers' prolific press, will afford entertainment to the lovers of light literature.

THE PRINCES OF ART. Translated from the French by Mrs. S. R. Urbino. Boston: Lee & Shepard.

This volume brings before us the Painters, Sculptors, and Engravers, the "old masters," so famous in the art-world. A fine book, and worthy a wide circulation. Cannot our young people be induced to read books of this sort rather then to give so much time to mere story-reading? They are full as interesting as story-books, and infinitely more helpful.

BEAR AND FORBEAR, another volume of the Lake Shore Series, by Oliver Optic.

HARD SCRABBLE, another of the Elm Island series, by the Rev. Elijah Kellogg.

These volumes are also issued by Lee & Shepard, and, coming from such popular authors, will be sure to have a multitude of readers.

AN INTRODUCTION TO LATIN COMPOSITION: By William F. Allen, A.M. Boston: Ginn Bros. & Co.

This appears to be an exceedingly well and carefully-prepared Manual of Latin Composition. It is adapted to pupils who are pretty well advanced in the preparatory course, that is, to those who are tolerably familiar with the vocabulary and diction of Cæsar and Cicero, or other prose authors, and have already attained considerable facility in turning simple sentences from English into Latin.

In addition to a large number of detached sentences, illustrative of the various rules of syntax, as they come up one after another for consideration, the author has introduced a considerable amount of connected discourse in the shape of anecdotes, epistles, and dialogues, taken from the best Latin authors. The vocabulary is all put at the end of the volume.

From a cursory examination of this vocabulary, we judge it to be prepared with great care and skill, so that the pupil can easily find the word or expression he is in search of.

The name of the publishing firm is sufficient to insure an almost faultless book, so far as their department of the labor can make it so. We commend the book to the attention of classical teachers.